

Application No. 09/584,363  
Amendment dated: October 12, 2005  
Reply to Office Action dated July 12, 2005

## Remarks/Arguments

Claims 3 to 7, 9 to 22, 27, and 29 to 32 remain pending in the application. Claims 33 to 35 are new.

New claims 33 to 35 are added to further claim aspects of the invention which clearly distinguish over the prior art.

The Examiner rejected claims 3 to 7, 9 to 22, 27, and 29 to 32 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,466,711 B1 to Laor et al. (Laor) in view of U.S. Patent No. 6,445,841 to Gloeckner et al. (Gloeckner). Applicant respectfully traverses the rejection under 35 U.S.C. 103(a).

Applicant submits that neither Laor or Gloeckner teach or suggest, alone or in combination, the invention as claimed in the present invention and that there is no suggestion or motivation in the cited references to combine them.

With respect, the Official Action simply fails to establish a prima facie case of obviousness.

For the Examiner to establish a prima facie case of obviousness, three criteria must be considered: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings, (2) there must be a reasonable expectation of success, and (3) the prior art references must teach or suggest all of the claim limitations. MPEP §§ 706.02(j), 2142 (8th ed.).

For the Patent Office to combine references in an obviousness analysis, the Patent Office must do two things. First, the Patent Office must articulate a motivation to combine the references, and second, the Patent Office must support the articulated motivation with actual evidence. *In re Dembiczak*, 175 F.3d 994,999 (Fed. Cir. 1999). While the range of sources for

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the motivation is broad, the range of available sources does not diminish the requirement for actual evidence. *Id.*

In his rejection, the Examiner states: *"It would have been obvious to one of ordinary skill in the art at the time of invention to apply the Gloeckner control unit and demultiplexer to the Laor apparatus for the benefit of being able to redirect multi-wavelength signals from input to output ports."* However, the Examiner makes this assertion without providing a motivation or suggestion to combine the cited references. As is known by the Examiner, in order to prevent hindsight analysis, there must be some motivation or suggestion to combine specific prior art in such a way as to arrive to the combination disclosed in the patent at issue. See, e.g., *Yamanouchi Pharmaceutical Co., Ltd. v. Danbury Pharmacal, Inc.*, 231 F.3d 1339, 1343 (Fed. Cir. 2000): *"the suggestion to combine requirement stands as a critical safeguard against hindsight analysis and rote application of the legal test of obviousness."*, and *Ecolchem, Inc. v. Southern California Edison Co.*, 227 F.3d at 1371-1372 (Fed. Cir. 2000), *"Combining prior art references without evidence or a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight."*

With respect there is simply no suggestion or motivation to combine the references in the manner of the rejection. Laor et al. teaches a MEMS switch having mirrors with two orthogonal axes of rotation. However, it neither discloses nor suggests multiplexing or demultiplexing optical signals of different wavelengths or having a controller to control the MEMS switch and/or the multiplexing/demultiplexing elements. As for Gloeckner et al., it teaches the use of a MEMS switch having mirrors with one axis of rotation used together with multiplexing/demultiplexing devices and a controller but, neither discloses nor suggests a MEMS switch with mirrors having two orthogonal axes of rotation. Applicant submits that there is no suggestion or hint of any kind in the cited art that combining the controller and multiplexing/demultiplexing elements of Gloeckner et al. with the MEMS switch of Laor et al. would lead to the invention as claimed. There is particularly no indication that the controller of Gloeckner et al., designed for the MEMS switch of Gloeckner et al. would work with the MEMS switch of Laor et al. Thus, in absence of a motivation or suggestion to combine Laor et al. with Gloeckner et al., Applicant submits that the obviousness rejection is improper and, for at least this reason, requests that it be withdrawn.

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Notwithstanding the above argument, Applicant wishes to emphasize that controlling the mirrors of the MEMS switch of Laor et al., i.e. a 3D-MEMS switch, is far more complicated than controlling the mirrors of the MEMS switch of Gloeckner et al., i.e. a 2D-MEMS switch. Thus, Applicant submits that a worker having ordinary skill in the art having regard to Laor et al. and Gloeckner et al. could not arrive at the invention as claimed for at least the reason that the controller of Gloeckner, made for a 2D-MEMS switch, would not work with the 3D-MEMS switch of Laor et al. Applicant also submits that modifying the controller of Gloeckner et al. to work with the 3D-MEMS switch of Laor et al. would not be possible without inventive ingenuity, which a worker having ordinary skill in the art does not possess. Thus, Applicant submits that combining the cited references would not lead directly and without difficulty a skilled worker to the invention as claimed. For at least this reason, Applicant requests that the rejection of independent claims 3 and 22, directed to photonic switches, together with the rejection of their dependent claims, be withdrawn.

Claims 3 and 22 have been amended to withdraw the limitation regarding the predetermined path not requiring focusing means. After careful review of the application, Applicant realized that such a limitation was not commensurate with a statement made at lines 25 to 29 of page 10.

Claim 20 has been amended to withdraw the limitation regarding the part of the optical path not requiring focusing means for the same reason as stated above.

Claims 33 to 35 are new. Claims 33 and 34 recite that at least one of the optical demultiplexer and the optical demultiplexer of in claims 1 and 22, includes a diffraction grating. Claim 35 recites that at least one of the input optical path and the output optical path of claim 20 includes a diffraction grating. Such diffraction gratings are shown, for example, as elements 40 and 50 of Fig. 3B.

Applicant submits that new claims 33 to 35 are clearly distinguishable over the cited prior art, which neither teaches nor suggests a photonic switch having a demultiplexer or a multiplexer including a diffraction grating as claimed in claims 33 and 34, or a method of routing a wavelength within a photonic having a diffraction grating in an input or output optical path.

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No fee is believed due for this submission. However, Applicant authorizes the Commissioner to debit any required fee from Deposit Account No. 501593. The Commissioner is further authorized to debit any additional amount required, and to credit any overpayment to the above-noted deposit account.

It is submitted that this application is now in condition for allowance, and action to that end is respectfully requested.

Respectfully submitted,

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